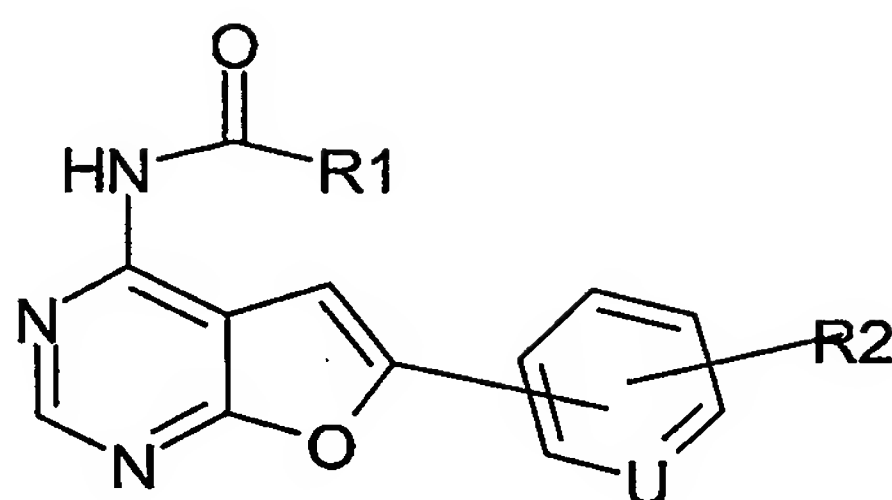


What is claimed is:

1. A compound of the formula I, or a salt, solvate, or a physiologically functional derivative thereof



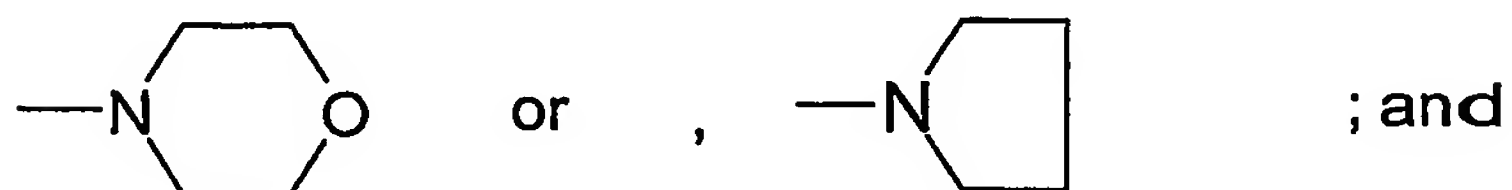
I

in which

U is CH or N; and

R1 is C₁₋₆alkyl, C₃₋₈cycloalkyl, -CH₂CH₂SCH₃, -CH₂-C₃₋₈cycloalkyl, phenyl optionally substituted with halogen or nitro; or

R1 is a radical of formula



when U is CH, R2 is hydrogen, halogen, C₁₋₆alkyl, or -OCH₃ ; and

when U is N, R2 is hydrogen.

2. A method for the treatment or prophylaxis of a disorder in a mammal, said disorder being characterized by misregulation of GSK-3, comprising, administering to the mammal a therapeutically effective amount of a compound of the formula I of claim 1 or a salt, solvate, or a physiologically functional derivative thereof.

3. The disorder of claim 2 that is selected from the list consisting of diabetes, obesity, Alzheimer's Disease, bipolar disorder, schizophrenia, stroke, baldness, hair loss, atherosclerotic cardiovascular disease, hypertension, polycystic ovary syndrome, ischemia, immunodeficiency, and cancer.

4. A pharmaceutical compositions comprising a therapeutically effective amount of a compound of formula I of claim 1, or a salt, solvate, or a physiologically functional derivative thereof and one or more of pharmaceutically acceptable carriers, diluents and excipients.

5. A method of treating Type II Diabetes in a mammal, comprising administering to said mammal a therapeutically effective amount of a compound of formula I of claim 1, or salt, solvate or physiologically functional derivative thereof.

6. A compound of formula I of claims 1-5 selected from the group consisting of

Hexanoic acid [6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

N-[6-(4-Methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-isobutyramide;

Cyclopentanecarboxylic acid
[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

N-[6-(4-Methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-3-methylsulfonyl-propionamide;

3-Fluoro-N-[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-benzamide;

Cyclohexanecarboxylic acid
[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

Cyclopropanecarboxylic acid
[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

Furan-2-carboxylic acid
[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

2-Cyclopentyl-N-[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-acetamide;

N-[6-(4-Methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-3-nitro-benzamide;

N-[6-(4-Methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-4-nitro-benzamide;

Cyclopentanecarboxylic acid (6-phenyl-furo[2,3-d]pyrimidin-4-yl)-amide;

Cyclopropanecarboxylic acid (6-phenyl-furo[2,3-d]pyrimidin-4-yl)-amide;

Cyclopentanecarboxylic acid
[6-(4-chloro-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

Cyclopropanecarboxylic acid
[6-(4-chloro-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

Cyclopentanecarboxylic acid (6-p-tolyl-furo[2,3-d]pyrimidin-4-yl)-amide;

Cyclopropanecarboxylic acid (6-p-tolyl-furo[2,3-d]pyrimidin-4-yl)-amide;

Cyclopentanecarboxylic acid
[6-(4-fluoro-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

Cyclopropanecarboxylic acid
[6-(4-fluoro-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide;

Cyclopentanecarboxylic acid (6-pyridin-3-yl-furo[2,3-d]pyrimidin-4-yl)-amide;
and

Cyclopropanecarboxylic acid (6-pyridin-3-yl-furo[2,3-d]pyrimidin-4-yl)-amide;

Morpholine-4-carboxylic acid
[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide; and

Pyrrolidine-1-carboxylic acid
[6-(4-methoxy-phenyl)-furo[2,3-d]pyrimidin-4-yl]-amide.